

WHAT IS CLAIMED IS:

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1. A solid-state image pickup apparatus comprising:
a mode setting circuit for allowing an operator to select desired one of a plurality of modes matching with a display format of a display which displays a video signal fed thereto;

5 a clock generating circuit for generating a plurality of clocks including a first clock and a second clock higher in frequency than said first clock;

10 a frequency selector for selecting either one of said first clock and said second clock in accordance with a mode fed from said mode setting circuit;

15 an image pickup section including a plurality of photosensitive cells for transforming, by photoelectric transduction, light incident thereto from a scene to be picked up, said image pickup section picking up said scene and producing signal charges representative of said scene in accordance with an output of said frequency selector;

20 a noise reducing circuit for reducing noise components included in a signal output from said image pickup section;

a digitizing circuit for converting an output of said noise reducing circuit to a digital signal in accordance with said first clock;

25 a signal processing circuit for processing an output of said digitizing circuit in a manner matching with picture display and/or recording; and

30 a controller for controlling said clock generating circuit, said frequency selector, said image pickup section, said noise reducing circuit, said digitizing circuit, and said signal processing circuit;

wherein said plurality of modes include a first mode in which said frequency selector outputs said first clock and a second mode in which said frequency selector outputs said

second clock.

1 2. An apparatus in accordance with claim 1, further comprising:

5 a color separating circuit for separating a signal output via color filters included in said image pickup section color by color;

 a frequency band limiting circuit for limiting a frequency band of each output of said color separating circuit; and

10 a multiplexing circuit for multiplexing outputs of said frequency band limiting circuit;

 wherein said color separating circuit, said frequency band limiting circuit and said multiplexing circuit are arranged between said noise reducing circuit and said digitizing circuit.

1 3. An apparatus in accordance with claim 2, wherein said frequency band limiting circuit passes, in said second mode, a frequency lower than a frequency in said first mode.

1 4. An apparatus in accordance with claim 2, wherein said frequency band limiting circuit includes an analog adding circuit for adding, among color-by-color analog signals each corresponding to a particular one of said photosensitive devices, a signal adjoining a subject position.

1 5. An apparatus in accordance with claim 1, wherein said clock generating circuit feeds said first clock as, among signals to be fed to a transfer path of said image pickup section, a control signal for controlling an operation of a resetting device for resetting a signal detected on said transport path

1 6. An apparatus in accordance with claim 5, wherein said
plurality of modes further include a third mode in which an
output of said frequency selector and an output to be fed to
said resetting device comprise said first clock, and a fourth
5 mode in which said output to be fed to said resetting device
comprises said first clock while an output of said frequency
selector comprises said second clock.

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Cont 1 7. An apparatus in accordance with claim 1, wherein said
clock generating circuit generates said first clock and said
second clock which are in an integral ratio to each other.

1 8. An apparatus in accordance with claim 1, wherein said
image pickup section includes vertical transfer paths for
transferring signals output from said photosensitive devices
in a direction of columns, and a horizontal transfer path for
5 transferring said signals fed via said vertical transfer
paths in a direction of rows, and wherein said controller
controls transfer of said signals from said vertical transfer
paths to said horizontal transfer path by distributing said
signals on an photosensitive device basis.

1 9. An apparatus in accordance with claim 1, wherein
nearby ones of said plurality of photosensitive devices have
geometric centers shifted from each other by a distance
corresponding to one half of a pitch of said plurality of
5 photosensitive devices in a direction of rows and/or a
direction of columns.

1 10. An apparatus in accordance with claim 1, wherein
said signal processing circuit includes a video outputting
circuit for feeding a processed signal to said display.

1 11. A method of signal processing comprising:

a mode setting step of selecting desired one of a plurality of modes which matches with a display format in which a video signal fed is displayed;

5 a clock generating step of generating a plurality of clocks including a first clock and a second clock which is higher in frequency than the first clock;

a frequency select step of selecting either one of the first clock and the second clock in accordance with the one mode selected;

10 an image pickup step of picking up a scene and producing a signal representative of the scene in response to the selected clock by using an image pickup device;

15 a noise reduction step of reducing noise components included in the signal produced by said image pickup step;

a digitizing step of converting an output the signal from which the noise components have been reduced by said noise reduction step to a digital signal in response to the first clock; and

20 a signal processing step of processing the digital signal in a manner matching with picture display or recording to produce the video signal;

25 wherein said plurality of modes include a first mode in which the first clock is selected and a second mode in which selects said second clock is selected.

1 12. A method in accordance with claim 11, wherein the image pickup device includes color filters, said method further comprising prior to said digitizing step:

5 a color separating step of separating the signal from which the noise components have been reduced into color component signals in accordance with the color filters;

a frequency band limiting step of limiting a frequency band of each of the color component signals; and

a multiplexing step of multiplexing signal of which the

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10 frequency band has been limited.

1 13. A method in accordance with claim 12, wherein said frequency band limiting passes, in said second mode, a frequency lower than a frequency in said first mode.

1 14. A method in accordance with claim 12, wherein said frequency band limiting step includes an analog adding step of adding, with respect to color of the color component signals, one color component signal to another color component signal adjoining the one color component signal.

1 15. A method in accordance with claim 11, wherein said clock generating step feeds the first clock as a control signal for controlling an operation of resetting a signal detected on a transfer path of the image pickup device.

1 16. A method in accordance with claim 15, wherein said plurality of modes further include a third mode in which the one clock selected by said frequency selected step and the control signal comprise the first clock, and a fourth mode in which the control signal comprises the first clock while the one clock selected by said frequency select step comprises the second clock.

1 17. A method in accordance with claim 11, wherein the first clock and the second clock which are in an integral ratio to each other.

1 18. A method in accordance with claim 11, wherein said signal processing step includes a video outputting step of matching the video signal to the display format to visualize the scene represented by the video signal.